COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF WELFARE

Bulletin No. 40 **1929**

Institutional Farms

September 15, 1927 to April 1, 1929

Issued by
Department of Welfare
Harrisburg, Pa.

P38.29
1.3

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LETTER OF TRANSMITTAL

HON. E. GRACE MCCAULEY, *Secretary,*
Department of Welfare,
Commonwealth of Pennsylvania,
Harrisburg, Pennsylvania.

MY DEAR MRS. MCCAULEY:

It is my pleasure to transmit herewith a report relative to the farms at the State owned institutions under the Department of Welfare and to my work with these farms since September 15, 1927.

The area of land, the kinds and number of livestock, the several farm and vegetable crops, undoubtedly comprise the largest farming enterprise related under one head to be found in Pennsylvania. Data giving the extent of these will be found in the succeeding pages.

The goals referred to under Institutional Farm Planning, Dairy, and Potatoes, constitute the policies that have been followed in order to enable those in charge of the institutional farms to make greater contribution to their respective institutions.

Respectfully yours,

R. BRUCE DUNLAP,
Agriculturalist,
Dept. of Welfare.

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GOALS for INSTITUTIONAL FARM PLANNING

Soil

Detailed soil survey with map showing location and variation in soil.

Farm chart showing layout of fields, drives, and streams.

Definite plan to meet drainage requirements.

Analyses of each field indicating lime need of each.

Rotation and Crops

Planned in accordance with the needs of the institution, human and otherwise.

Plan to include the efficient use of manure and commercial fertilizers.

Long time plan to provide for use of waste land for pasture, woodlot, or other useful purpose.

Woodlot practice to be just as carefully planned as that for the tilled acres.

Scattered trees, stumps, and ditches to be eliminated as possible.

Annual meeting with farm manager and others directly concerned in late fall or early winter to develop detailed farm plan for the following season.

Efficient farm practice for each crop including seed, fertilizer, spraying, and other care.

Livestock

Attention to health, breeding, and general care.

PENNSYLVANIA INSTITUTIONAL FARMS

LAND, CROPS AND LIVESTOCK

Land

A total of 21,266 acres is in use at seventeen State institutions responsible to the Department of Welfare of the Commonwealth of Pennsylvania.

Supervision of the farms listed in Table 1 is a part of the responsibility of the State Department of Welfare. Definite responsibility within the Department for such supervision was vested in an agriculturalist employed September 15, 1927. Immediately a study of the several farms and the problems involved in general as well as for the institutions individually was made.

Contacts with the farm programs include the
- annual conference for planning the succeeding year's crop program;
- intermittent contacts such as those by correspondence, telephone, visit;
- uniform accounting system;
- two group meetings yearly with the farm managers.

One of these is of a purely instructional nature and has been held at the Pennsylvania State College during the winter. The other is an auto tour during the latter part of the crop season planned to give farm managers and other institutional officers an opportunity to see and study organization, conditions and results at other institutions. Intermittent contacts with the several institutional farms are grouped as to purposes about the goals given under Farm Planning, Dairy, Potatoes, Poultry and Miscellaneous programs. This applies to all except such visits as are made on request for specific purposes.

Crops

Data regarding the more common field crops for the year 1928 will be noted in Table 2. No effort has been made to compare one farm as a whole with another. There has been a definite effort, however, to encourage every step toward efficiency on each farm. As a measure of efficiency, a crop index figure has been developed which compares the yields of the crops referred to in Table 2 with the yields of the farm crops in the county in which an institution is located. The census data for the nearest two years is used as a basis for comparison. This figure indicates the percentage above or below the average yields for the county represented by the yields at the institution concerned.

The crop index for the Danville State Hospital in 1928 was 170, indicating that the yields of the five principle farm crops (corn, oats, wheat, hay, potatoes) produced on 100 acres were such as would have required 170 acres on the average farm in Montour County. The average of the crop indexes of the fifteen institutions operating during that year is 115. All were above the average for their respective counties except three. In at least two of these cases, the institutions are located on mountainous hills where the soil that is being farmed has been wrested from most uncongenial conditions and could scarcely be expected to compete with average farm areas.

TABLE 1. USE OF LAND

Institution	Total Acres	Tilled & Truck	Woodlot & Misc.	Buildings	Orchard	Pasture
Allentown State Hospital, Allentown	486	370	43	33	9	52
Danville State Hospital, Danville	668	437	154	45	12	20
Eastern State Penitentiary, Graterford	1,676	1,450	---	---	---	---
Farview State Hospital, Waymart	1,221	301	884	---	6	40
Harrisburg State Hospital, Harrisburg	418	267	17	114	---	48
Laurelton State Village, Laurelton	733	85	600	25	---	20
Norristown State Hospital, Norristown	987	601	29	100	20	187
Penna. Industrial Reformatory, Huntingdon	669	495	153	27	27	---
Penna. Training School, Morganza	950	577	191	112	53	---
Pennhurst State School, Pennhurst	715	640	110	80	46	60
Polk State School, Polk	2,039	634	1,047	130	29	235
Selinsgrove Epileptic Colony, Selinsgrove	395	---	---	---	---	---
State Industrial Home for Women, Muncy	569	200	340	17	12	---
Torrance State Hospital, Torrance	2,003	875	649	47	---	497
Warren State Hospital, Warren	1,435	743	266	130	17	328
Wernersville State Hospital, Wernersville	1,015	551	286	71	32	39
Western State Penitentiary, Rockview	5,287	2,227	1,968	140	198	404
Grand Total	21,266	10,453	6,737	1,071	461	1,930

TABLE 2. ACRES AND YIELDS FOR CERTAIN CROPS FOR 1928

Institution	Wheat		Oats		Hay		Corn				Potatoes	
							Ears		Ensilage			
Address	A.	Yield	A.	Yield	A.	Yield	A.	Yield	A.	Yield	A.	Yield
Allentown	20	22.	48	15.	45	2.8	77	29.	22	8.	30	50.
Danville	87	23.	25	38.	74	2.6	58	110.	68	10.	27	321.
Farview	---	-----	74	12.	55	2.	---	-----	23	6.5	26	82.
Harrisburg	30	20.2	---	-----	37	1.7	23	101.	15	12.3	30	240.5
Laurelton	15	8.	7	61.	60	.9	3	27.	15	9.	9	172.
Norristown	95	26.5	---	-----	162	1.7	45	55.5	85	7.8	66	133.
Huntingdon	80	10.	66	22.	93	2.5	65	61.	22	9.	20	147.
Morganza	18	11.	57	35.	157	2.	16	90.	25	13.	22	129.
Pennhurst	112	18.	26	16.	171	2.3	67	94.6	61	7.8	45	143.
Polk	---	-----	68	36.	191	1.9	---	-----	88	13.	30	135.
Muncy	32	22.	27	41.	35	3.	22	127.	8	20.	5	242.
Torrance	112	7.9	93	43.3	139	2.	---	-----	102	3.	25	172.
Warren	5	20.	75	36.5	181	2.9	---	-----	66	12.6	22	181.
Wernersville	94	13.	57	32.	117	2.4	106	43.	39	7.7	35	173.
Rockview	---	-----	316	37.3	315	1.6	240	81.	90	7.2	75	157.

Livestock

The livestock maintained at the several institutions appears in Table 3.

Cows, numbering 608, on which comparable records were obtained for 1928, showed an average production of 9574 pounds milk.

Pigs grown from 303 litters averaged 6.22 per litter.

TABLE 3. HORSES, SWINE AND SHEEP AT STATE INSTITUTIONS MAY 31, 1928

Institution Address	Horses & Mules	Colts	Brood Sows	Shoats & Fat Hogs	Pigs	Ewes	Lambs
Allentown	23	------	37	149	86	4	3
Danville	26	------	24	100	71	------	------
Farview	12	------	43	69	176	------	------
Harrisburg	18	------	------	94	------	------	------
Laurelton	9	------	8	47	25	28	37
Norristown	41	------	59	206	275	17	15
Huntingdon	21	------	17	118	97	------	------
Morganza	13	------	9	26	55	141	206
Pennhurst	35	------	35	59	242	35	12
Polk	15	------	25	106	137	------	------
Muncy	8	------	3	24	19	------	------
Torrance	21	10	25	107	92	32	18
Warren	19	------	49	------	214	------	------
Wernersville	24	------	32	128	117	------	------
Rockview	80	17	41	50	290	------	------

GOALS AND RESULTS

Soil

A detailed soil survey is essential to the intelligent and satisfactory planning of rotation, fertilizer needs, and other important features of farm planning. The Department of Agronomy at the Pennsylvania State College cooperated very effectively during 1928 in making such surveys for six of the institutions included in this report. A well executed map was submitted showing the areas and locations of the several soils, together with a narrative report, to each of the six institutions. Similar plans include another one-half dozen institutions for 1929, and the remainder will be cared for as soon as possible.

Farm charts in blueprint form from such farm maps are made showing the outlines of the several fields. These are used by the farm manager to record and report his cropping plans for each year.

The lime need at each institution has been determined and is recorded so that field by field the most efficient applications may be made. This determination has included more than 300 analyses.

Fertility maintenance, use of manure, cover crops and commercial fertilizers are discussed in connection with the making of each farm plan annually.

Rotation and Crops

Rotations are planned about the needs of dairy, vegetables, potatoes and swine.

As much legume hay and ensilage as possible up to the full needs of the dairy are planned for. A number of the institutions plan a rotation for the vegetables so as to include the turning under of a clover sod at least every three years. A growing practice sets aside a definite area for potatoes, the rotation being potatoes, wheat and clover, or potatoes and wheat, sweet clover being plowed the third year for potatoes. Should additional crop acres be available they are used to produce as much hay and grain as possible for horses, swine, and other livestock. The common rotation is corn, oats, wheat, and hay. A definite rotation for swine pasture provides in part for the control of parasites as well as animal forage.

Livestock

Breeding practice, aimed at increasing production in the dairy, piggery, and hennery, has been stressed. Elsewhere results appear in connection with the dairy.

Herd sires and needs for the piggery at eight institutions have been met by locating

5 Duroc Jerseys
3 Berkshires.

In all the poultry flocks emphasis has been placed on knowing the source of chicks so as to assure good production and health.

Health is recognized as essential. A definite program of sanitation must therefore be followed. The make-up of this program is that of the Bureau of Animal Industry.

DAIRY GOALS

Breeding

Select sires as replacements are necessary with desirable type and with dams showing annual production records of 1100 pounds or more butter.

Register the good to best animals in the herd.

Cull out low-producing and poor-type females.

Health

Follow with strict cooperation the program of the Bureau of Animal Industry for the control and elimination of tuberculosis, Bang disease, and continuous sanitary management.

Production

Efficient feeding, and general management, including grain and roughage in proper amount and content; producing ample ensilage and legume hay; growing heifers to early maturity; using capable labor, and the aid of the Agricultural Extension Service, improvement and breed associations; and culling regularly on basis of production and type.

Records

Keep uniform records on production, health, and breeding.

INSTITUTIONAL DAIRY HERDS

Dairy herds discussed herein are those of the State owned institutions supervised by the Pennsylvania Department of Welfare. These institutions with the number in their respective herds follow in Table 4:

TABLE 4. CENSUS OF STATE OWNED DAIRY HERDS

Institution	Cows	Bulls	Heifers	
			Over 3 Mo.	Under 3 Mo.
Allentown	51	2	49	9
Danville	91	4	42	10
Farview	45	1	12	5
Harrisburg	24	2	18	8
Laurelton	20	2	29	6
Norristown	97	4	30	13
Huntingdon	46	2	29	6
Morganza	28	4	22	2
Pennhurst	71	3	34	20
Polk	133	4	60	20
Muncy	18	2	12	5
Torrance	21	3	30	3
Warren	75	4	45	14
Wernersville	52	3	50	9
Rockview	80	2	50	26

Management in all except two of these herds is that of a dairyman with the supervision of a general farm manager who is responsible to the superintendent of the institution. Patients or prisoners are used as milkers and helpers in most of the herds.

All herds but one are made up of grade and purebred Holsteins. Due to the diligent conduct of the health program over the past several years, several herds are not up to the normal and needed numbers. The relation of the number of cows of producing age to the institutional population and the tillable acres is shown in Table 5.

TABLE 5. NUMBER OF COWS, POPULATION AND TILLABLE ACRES

Institution	Population		Tillable Acres*	Population per Cow	Tillable Acres per Cow
	Employes	Patients Prisoners			
Allentown	258	1,351	349	31.5	6.8
Danville	312	1,747	392	----------	----------
Graterford	----------	----------	1,200**	----------	----------
Farview	100	618	291	15.9	6.5
Harrisburg	256	1,541	232	74.9	9.7
Laurelton	79	507	440**	29.3	22.
Norristown	510	2,900	551	35.2	5.7
Huntingdon	124	1,127	460	27.2	10.
Morganza	100	837	522	33.4	18.6
Pennhurst	170	1,229	561	19.7	7.9
Polk	310	2,358	599	20.	4.5
Selinsgrove	----------	----------	300**	----------	----------
Muncy	34	123	200	8.7	11.1
Torrance	85	525	810	29.	38.6
Warren	312	1,667	693	----------	----------
Wernersville	175	1,133	505	25.1	9.7
Rockview	82	795	1,977	10.9	24.7

* Not including vegetable land.
** Estimated.

In three of the herds a ready mixed ration is used, while in the others the feed is mixed according to ingredients most easily obtained. Inasmuch as management depends on many factors, human and otherwise, at no one time is it usually all that could be desired. A very real effort, however, is being made toward efficient methods and increasing production.

Twelve of the institutions are availing themselves of herd improvement association service. Such service is not available to the others.

Production in 1927 varied from 5238 pounds per cow in a herd of 52, to 12,713 pounds per cow for the 75.61 cows in the Warren State Hospital herd.

Data gathered by Main and Company in 1927 indicated an average production for the two year period ending May 31, 1927, for 506 cows, of 10,192 pounds per year. The cost per quart as computed by the same source for the same period was $.0364. In Table 6 the detail of this cost is shown.

TABLE 6. DISTRIBUTION OF MILK PRODUCTION COSTS

Expense	Average %	Range %	Median
Salaries & Wages	11.89	6.6 to 18.7	10.85
Feed	76.79	67.57 to 85.46	78.11
Bedding	6.07	1.59 to 8.89	6.26
Supplies	.94	.03 to 2.45	.85
Cattle (replacements)	1.89	.0 to 10.2	.7
Fuel	.33	.6 to 2.05	1.31
Miscellaneous	2.09	.11 to 8.13	1.57

GOALS AND RESULTS

Breeding

Breeding practice to assure better herds in the future must include the use of

outstanding sires
increasingly productive cows
accurate and complete records.

Sires purchased in the past eighteen months have been chosen with a desire for good type, especially such conformation as indicates strong constitution and promise of productive offspring. Assurance of the latter is the basis of a requirement that at least four or five dams in the first three generations average in production 1100 pounds or more of butter as a year's production.

Nine bulls purchased in the year ending April 1, 1929, merit mention. 51 of the 63 dams in the first three generations of these animals have annual records which show an average of 1135.4 pounds butter. Eight of the first dams in the yearly tests average 944.39 pounds butter. The average price was $540.00, while the age was 6.1 months.

Photographs and further description for a number of these animals appear here and elsewhere.

Selection is being practiced so that poorest cows may not have a part in the future herds, and that the best may be identified and managed accordingly.

Records of production, breeding and health for each female are kept on a special form provided for all heards.

PENNSYLVANIA INDUSTRIAL REFORMATORY

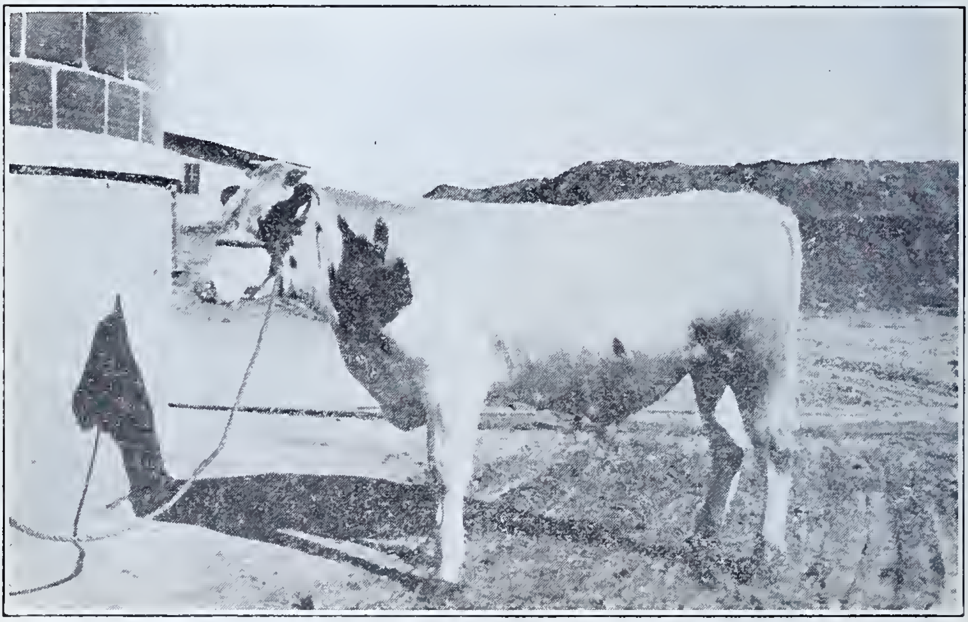
A grandson of Sir Inka Prilly Segis and King of the Ormsbys. Six dams in the first three generations averaged 1126 pounds butter and 23,931 pounds of milk with an average butterfat test of 3.26. The first dam produced 899.21 pounds butter and 21,825 pounds milk with an average butterfat test of 3.25 when two years of age.

Health

The health program, as stated elsewhere, is that of the Bureau of Animal Industry of the Pennsylvania Department of Agriculture. Some outstanding results are the fruit of this program. A statement, treating largely with dairy health, follows:

> "The following remarks represent the health status of Pennsylvania State Institutional herds and flocks, with reference to transmissible diseases.
>
> "Livestock and poultry are maintained at our Institutions for purposes other than what they may return financially. This livestock which makes profitable returns, also has a value in conjunction with occupational therapy, not computed in dollars. However, for livestock and poultry to be both profitable and of value in work of occupational therapy, it must be healthy. This places the health of Institutional livestock and poultry at a reward and deserving of considerable importance from the management. Those diseases of livestock communicable to man, would necessarily have to be eradicated."

"The prevention of any disease is more economical than cures. It is also much easier to keep herds free from diseases than it is to establish free herds from those which are once infected. The practicing veterinarian employed by the Institution with these thoughts in mind, renders a valuable service and is an important factor in maintaining their herds and flocks at a high standard of health.



WERNERSVILLE STATE HOSPITAL.

A grandson and great grandson of King of the Ormsbys. Six dams in the first three generations averaged 1016.35 pounds butter. His dam at twenty-three months of age produced 756.05 pounds butter and 17,355.6 pounds milk with an average butterfat test **of 3.49.**

"The Pennsylvania Bureau of Animal Industry's activities involve the supervision of health of the State Institution livestock and poultry for the prevention, control and eradication of transmissible diseases. In this connection, the poultry, swine, sheep, horses and dairy cattle at our Institutions are maintained under a system of recommended sanitation. Approved tests and physical examinations are made at more or less regular intervals to detect the presence of any transmissible disease. During the past several years, no disease outbreak has been experienced of an unusual, or alarming character, and the present health status of the Institution livestock and poultry is creditable."

"The dairy herds besides making a profitable return, command the greater livestock investment, share a proportionate amount of attention and therefore, receive their share of protection from disease.

"Some years ago the Bureau of Animal Industry was actively engaged in eradicating tuberculosis from these herds. Through cooperative efforts, tuberculosis has been eliminated. The problem now confronting the Bureau is to prevent a reintroduction of that disease. This has been accomplished so far by strict adherence to the provisions of the Accredited herd plan, under which these herds operate.

STATE INDUSTRIAL HOME FOR WOMEN

A grandson of King Pieterje Ormsby Piebe and King Ona Pontiac. Six dams in the first three generations averaged 1131 pounds butter and 25,121.7 pounds milk with an average butterfat test of 3.57. His dam at two years of age produced 891.54 pounds butter and 19,482.8 pounds milk with an average butterfat test of 3.66.

Bang Disease Eradication

"For the past several years, a representative of the Bureau of animal Industry has been working cooperatively with each Institution and their veterinarian, toward the complete eradication of Bang's Disease from their dairy herds. This disease is more generally known as "Contagious" or "Infectious Abortion."

"Bang Bacillus Disease is a specific transmissible disease of cattle, swine and possibly certain other animals. It is due to a specific cause which is transmitted from one animal to another. After it has once been introduced into herds, the economic loss it causes is probably not surpassed by any other disease of cattle now prevalent in this country.

"December of 1921, Pennsylvania formulated a Plan for the Prevention, Control and Eradication of Bang Bacillus Disease. It is known as the "Pennsylvania Plan" and has been revised several times, but its principles have remained unchanged. This Plan was offered to the Institutions for use as definite knowledge for the eradication of Bang's Disease and its principles referred to them for adoption. The Pennsylvania Plan is based on principles of the diagnosis and removal of the infected animals, sanitation and disinfection."

NORRISTOWN STATE HOSPITAL

A double grandson of King of the Ormsbys. Six dams in the first three generations averaged 1108 pounds butter and 23,682 pounds milk with an average butterfat test of 3.74. His dam at five years of age produced 891.88 pounds butter and 20,473.7 pounds milk with an average butterfat test of 3.48.

Health Survey

"June of 1925, a general health survey was made of Institution owned herds, by a representative of the Pennsylvania Bureau of Animal Industry. This herd survey indicated the prevalence of Bang Disease. It was therefore deemed advisable, in view of the economic importance of Bang Disease eradication to suggest that immediate steps be taken to control and eradicate this disease.

"Fourteen herds were in the group surveyed and in several of these herds, a diagnostic test for the presence of Bang's Disease had been made several years prior to the time of the survey. Little had been done toward the control of the infection from that time on, and it was thought that most likely the disease had steadily progressed, as such was indicated by the number of clinical abortions occurring annually in some of the herds.

"The first complete diagnostic herd test for Bang's Bacillus Disease in the State Institution herds was made in June of 1925. The remaining number of herds were tested as time permitted, and after a period of approximately one year from the date of the first herd tested, diagnostic tests had been made on the entire group of State Institution herds. Following the report of each initial complete herd test the Institution was urged to adopt the Pennsylvania Plan and manage their herd in accordance with the provisions of the Plan. Two of the Institutions adopted the Plan in its entirely and the results they obtained were equally as encouraging as those which we had previously found from our experience in preventing, controlling and eradicating Bang's Disease from other herds.

DANVILLE STATE HOSPITAL

A grandson of King Ona and Finderne Pride Fayne. Seven dams in the first three generations averaged 1134.87 pounds butter. Six dams averaged 24,675 pounds milk with an average butterfat test of 3.49. His dam at four years of age produced 1008.53 pounds butter and 24,048.7 pounds milk with an average butterfat test of 3.35.

"The Pennsylvania Plan provides for the complete isolation of the Bang infected animal from the other members of the herd. A large number of our Institutions did not have the facilities to carry out this provision of the Plan with the result that the positive animals were separated in one end of the main dairy barn, or wherein there were several sections to the barn, they were placed in one of these sections, "Most of the Institutions were in need of a given amount of milk and if the milk supply of the herd had been cut off by a disposal for slaughter of the reacting animals, there was no other available source of supply, or money to procure milk for the Institution's need. Therefore, the adoption of a Plan which was only an approach to the Pennsylvania Plan was imperative. The Institution Plan, a deviation from the Pennsylvania Plan, was very weak, in a most important principle, in that it permitted contact between the infected and susceptible animal. An infectious disease may be controlled for only a limited time by this method and never eradicated.

NORRISTOWN STATE HOSPITAL

A grandson of King Pieterje Ormsby Piebe and King Ona Pontiac. Six dams in the first three generations averaged 1180.93 pounds butter and 25,944.7 pounds milk with an average butterfat test of 3.64. His dam at eight years of age produced 879.83 pounds butter and 22,746 pounds milk with an average butterfat test of 3.09.

"The Institution could therefore not provide a more plausible way out of their Bang Disease Problem than to grow young cattle from the mature animals in the herd, among which were a large number infected. By this means they attempted to raise young cattle to maturity free from infection, these healthy animals to be used as replacements at such time when the infected group could be slaughtered. Wherein sanitation was good and the management most careful to prevent the spread of infection, the Plan worked out to partial satisfaction. However, a fair percentage of the cattle that had been grown free from infection became infected as they were brought into the main dairy herd and in contact with the older infected animals or from being added before the infection in the mature group had been completely eradicated. It did, however, assist us in eventually reaching that stage in our plan of control, when there was a sufficient amount of milk being produced to meet the needs of the institution, and the non-profitable infected animals of long standing could be disposed of for slaughter. The results in herds that practiced this type of plan or deviations of it, are conclusive proof of the economy of completely isolating the infected animal from the very first inception of any plan toward eradication of Bang's Disease. The Bang infected animal is not a profitable animal, and only acts as a menace to those other healthy animals.

Pennsylvania Plan Eventually Adopted

"Though a definite plan was offered the Institution for the Prevention, Control and Eradication of Bang's Disease in 1925, the Pennsylvania Plan in its entirety was not followed by all of the Institutions until as late as November of 1928. Initial diagnostic tests on the herds had indicated that infection was present. Some were more extensively infected than others, which may be accounted for in some extent by the manner in which the herd was promoted. From the inception of the work, however, the Pennsylvania Plan in its entirety was adopted, as previously stated, by two of the Institutions.

ALLENTOWN STATE HOSPITAL

A son of King Piebe of York. The first two dams averaged 989.23 pounds of butter and 22,325 pounds milk. His dam produced 946.05 pounds buttter and 24,103 pounds milk with an average butterfat test of 3.14.

"Testing was started in the one herd August of 1925 and in the other July of 1926. The initial test on the first herd revealed 21.6% infection, as against 3.6% infection in the second. Each herd comprised approximately 50 head of cattle. Following the initial test on the one herd, no reacting animals were found, until February of 1927 when one positive, one highly suspicious, and two slightly suspicious animals were disclosed from test. The positive and highly suspicious animals were removed from the herd immediately. The premises were thoroughly cleaned and disinfected and subsequent tests thereafter were negative. The herd was issued an Abortion Free Certificate, June 13, 1928. No abortions have occurred in the herd for the past two years.

TABLE 7. SUMMARY OF HERD TESTS

Institution	Date Initial Test	No. T.	%	Date	No. T.	%	Date	No. T.	%	Date	No. T.	%
Allentown	8-3-25	113	22	6-16-26	96	19	9-2-27	55	25	2-12-29	127	4
Danville	12-28-22	136	34	9-3-23	90	12	6-18-25	89	0	2-15-26	118	7.6
Harrisburg	6-19-26	57	25	11-29-26	40	7.5	7-20-27	44	0	1-13-28	50	4
Huntingdon	7-1-26	55	1.8	9-7-26	40	0	5-21-27	43	0	4-23-28	0	-----
Laurelton	8-19-25	34	22	2-4-26	26	0	6-1-26	22	0	2-23-27	44	4.5
Morganza	9-11-24	70	49	7-20-27	70	30	10-4-27	90	17	2-8-28	81	21
Muncy	6-28-26	28	25	9-7-26	25	0	4-6-27	31	0	9-7-27	33	0
Norristown	11-14-27	107	15	4-9-28	101	2.9	6-11-28	91	1.1	8-17-28	107	0
Pennhurst	7-3-25	151	11	5-24-26	101	1.9	12-17-26	93	0	12-5-27	109	1.8
Polk	12-16-25	188	4.2	4-19-26	189	3.1	12-8-26	122	0	5-4-27	119	0
Rockview	4-26-26	209	23	9-25-26	101	1	2-14-27	81	1.2	7-9-27	85	0
Torrance	8-15-27	75	25	6-16-28	78	2.5	7-21-28	57	1.7	9-24-28	62	0
Warren	12-9-25	133	36	12-9-25	133	36	4-12-26	115	4.3	12-6-26	114	7
Wernersville	8-3-25	87	25	1-11-26	37	5.4	4-19-26	41	12	4-25-27	78	3.9

Chart "A" is not a competed summary. It was compiled to indicate the progress made from year to year.

TABLE 7

Institution	Date	No. T.	%	Date	No. T.	%	Date	No. T.	%	Date	No. T.	%
Allentown	--------	-----	-----	--------	-----	-----	--------	-----	-----	--------	-----	-----
Danville	12-15-26	96	0	2-3-28	87	1.1	9-17-28	95	0	4-20-29	151	0
Harrisburg	5-8-28	49	12	6-22-28	49	22	8-13-28	34	5.8	10-8-28	44	0
Huntingdon	--------	-----	-----	--------	-----	-----	--------	-----	-----	--------	-----	-----
Laurelton	6-21-27	29	0	6-13-28	48	0	--------	-----	-----	--------	-----	-----
Morganza	3-28-28	76	11	4-18-28	66	0	6-14-28	67	0	7-13-28	57	0
Muncy	6-13-28	36	0	10-5-28	34	0	4-3-29	37	0	--------	-----	-----
Norristown	12-14-28	136	4.2	12-22-28	104	2.8	2-4-29	121	1.6	3-30-29	126	4.7
Pennhurst	3-26-28	105	0	5-31-28	110	0	3-2-29	122	1.6	4-22-29	77	0
Polk	11-14-27	119	0	11-30-28	212	.9	1-14-29	123	0	--------	-----	-----
Rockview	3-14-28	78	1.2	7-18-28	68	0	11-3-28	85	0	3-7-29	84	0
Torrance	12-3-28	63	0	3-6-29	63	0	--------	-----	-----	--------	-----	-----
Warren	5-4-27	106	4.7	11-9-27	120	2.5	5-3-28	118	1.6	4-1-29	47	2.1
Wernersville	4-18-28	69	1.4	10-15-28	95	1	12-8-28	52	0	3-11-29	61	0

Table 7 is not a completed summary. It was compiled to indicate the progress made from year to year.

"In the case of the second herd, the initial test removed all infected animals and a certificate was issued to the herd, April 23, 1928, in accordance with the provisions of the Pennsylvania Plan.

"To give a detailed report relative to the management and those principles employed by the remaining twelve Institutions for the control of Bang Disease, prior to their adoption of the Pennsylvania Plan, would require more space than is allotted for a summary of this work. Since their adoption of the plan, results have been very encouraging.

"The following table is therefore supplied to supplement an extensive discussion. The summary represents in the majority of herds only a limited number of the applied tests. You will note in the case of certain herds, the results of the entire herd tests, up to certain dates where little progress is made in reducing the infection, than a complete herd test where the percent of infection is reduced considerably. It is at this stage of the testing that the infected animals are removed, and all provisions of the "Pennsylvania Plan" are strictly observed. There is also considerable variation in the dates of tests recorded. These variations are made so as to better picture the progress made from year to year.

"It is almost phenominal how quickly the infection is reduced to a low percent after several tests, following the removal of reactors and disinfection. It is at this stage of eradicating the disease that the herd needs particular observation, regular tests and a close adherence to the "Pennsylvania Plan" to completely eradicate the infection. If this is not done, the infection soon rises to a higher percent, which very often means clinical manifestation of the disease (abortions) will follow.

Infection Curve

TABLE 8. INFECTION CURVE

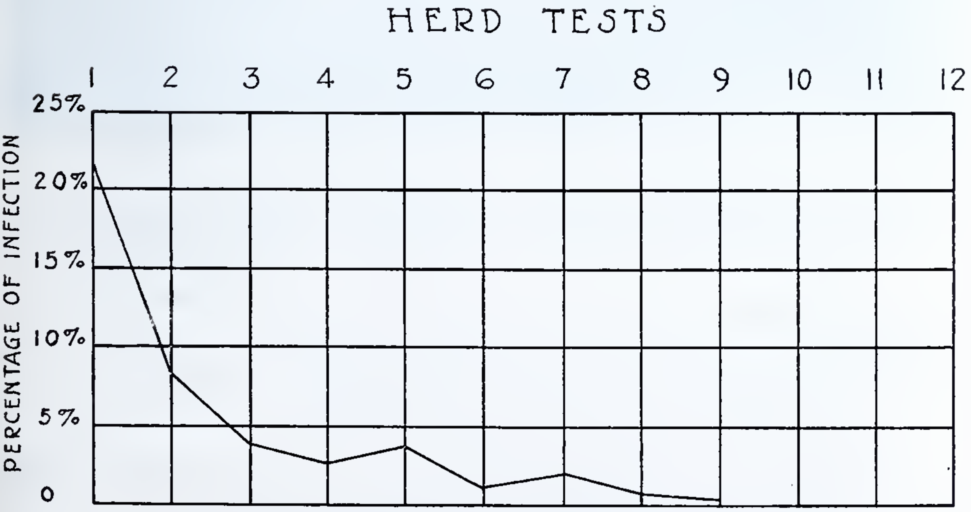


Table 8 shows the infection curve from a completed summary of tests of the entire Institution herd group for the eradication of Bang Bacillus Disease.

"The curve of infection as pictured in table 8 indicates that infection has been reduced to a point where very little remains. Table 7 indicates that the infection is confined to a limited number of herds. However, we are not in a position to rest on our oars until all animals in the various herds have passed a negative test covering a period of a year or more and all mature animals have delivered a normal full time calf. Our sanitation must then be continued at a high standard and no additions made to the herds until their health has been first certified.

"The progress made in the control and eradication of Bang Disease in Pennsylvania State Institution herds should lend encouragement to other owners who are confronted with a similar problem.

"The most encouraging feature of all is the absence of abortions and to see the calf barns and pens filled to overflowing with healthy young offsprings.

B. Scott Fritz, V. M. D.

TORRANCE STATE HOSPITAL

A grandson and great grandson of King of the Ormsbys. Six dams in the first three generations averaged 1212 pounds butter. Five dams averaged 25,010 pounds milk with an average butterfat test of 3.83. The first dam produced 1282 pounds of butter.

Production

While the average production has been given for a number of the herds, special mention is due at least two, those at the Warren State Hospital and the Polk State School.

For the Cow testing Association year ending March 1, 1928, 75.61 cows at the Warren State Hospital produced an average of 12,743 pounds milk and 436 pounds butterfat. In the same period at the Polk State School 102.25 cows produced an average of 11,896 pounds milk and 420 pounds butterfat. A statement regarding its outstanding herd from each of these institutions follows:

Warren State Hospital

"During the spring of 1908 six purebred Holstein cows were purchased by the Warren State Hospital for the purpose of building up a purebred herd to replace its herd of grade cows. About eleven years later the herd totaled 265 head of which only 31 were purebred, a rather small increase over the original six animals for the eleven year period. At the present time, or about ten years later, the herd numbers 132 head comprised of 98 purebreds and 34 grades. It has been the policy in the management of the herd during the past ten years to decrease the size of the herd but to increase the milk supply. This has been done by increasing the average yearly production from 8000 pounds to 12,713 pounds milk.

"The first sire to have any noticeable effect on the herd was Bonnymeads Pietertje De Kol, purchased from the Bonnymeads Farms in 1913. This bull added several very good cows to the herd. One of his best daughters, Adalma Pride De Kol, has an A. R. S. O. record at five years of 21,633.9 pounds milk and 701.94 pounds fat. The sire deserving the greatest credit for improvement in the herd was King Korndyke Sadie Vale 20th. He is credited with an increase of 25% in milk and 42% in fat in his daughters over their dams.

"Rag Apple Pietertje King, Sir Mary Colantha, and Colantha Yankee Lad followed in the order named as herd sires. These bulls all did good work, showing both an increase in production and an improvement in type in their daughters over the dams. The present senior herd sire is A K S King Pontiac, a grandson of Tilly Alcartra and May Echo Sylvia. Conwango Lilith Korndyke, a son of King Korndyke Sadie Vale 20th, is junior herd sire.

"In 1923 a serious outbreak of contagious abortion occurred. In order to clean up this disease it has been necessary to kill approximately 150 cows, many of these being our highest producers. Because of this necessary killing there has been a decrease in the size of the herd, and in the average production. It is only in the past few months that we have had the disease under control. With the cooperation of the Bureau of Animal Industry we hope to have a clean herd soon.

"Good, well developed corn silage in generous quantities, a variety of mixed hay, clover, and alfalfa, and a good supply of mangles have been a great help in maintaining a good flow of milk."

K. N. White, Farm Mgr.

Polk State School

"The factors which have made this herd so outstanding are: careful selection of herd sires, ones backed up by production, type, quality and proven ability to transmit type and production. Once finding the lines of breeding that knit well together, sires have been selected of the same line of breeding.

"Proper and severe culling of females includes close attention to coarseness and fineness. The heifers are grown out well and kept growing after they come in milk until they reach maturity. Feeding cows well when they are dry so as to have them in good condition when they freshen is sure to increase their production. We feed according to production but avoid getting them too fat or too thin. It is necessary to change the ration on some cows to avoid getting too fat or too thin, either one of which will affect production."

H. C. Ewalt, Farm Mgr.

POLK STATE SCHOOL

A son of Sir Inka May. A grandson of Matador Segis Walker. Four dams in the first three generations averaged 1100 pounds butter and 25,413 pounds milk with a butterfat test of 3.42. His dam produced 1088.46 pounds butter and 24,324 pounds milk at 6½ years of age with a butterfat test of 3.57.

Records

Certain records are essential to carrying out the program as it applies to breeding, health, and production. On June 1, 1928, a uniform system for recording such data was adopted. The general accounting system for all institutions includes the recording of

milk produced

feed consumed

changes

in the numbers of dairy animals. In order to keep the identity of each animal, the production for all females, the essential health and breeding facts, an individual herd record card was also put into use in June, 1928. Individual herd record cards record the

identity of each animal
production for all females
essential health and breeding facts.

POTATO PROGRAM

Goals and Results

Seed

Careful attention has been given to the result of tests with varieties and strains of seed potatoes as conducted by the Pennsylvania State College. Institutions have been urged to use seed only from the best sources as determined by these tests. Aid has been given in the selection of some 10,000 bushels of seed potatoes.

Spraying

Time

manner

material

have been stressed as essentials in the spraying program. The assurance of spraying equipment which will carry at least 300 pounds pressure at the end of the nozzle and that such equipment is in working condition before the spraying season is at hand, the ordering in ample time of proper spraying materials, and their application in accordance with the best information available, constitute the spraying program.

Soil

The selection and preparation of soil in such a manner as to assure fertility, good seed bed, and convenience for spraying.

Yields

In 1928, 50 bushels to 321 bushels per acre were grown on a total of 467 acres. The latter high yield was the average for a 27 acre field at the Danville State Hospital. During the seasons of 1927 and 1928, acres producing 400 bushels or more were grown at the Warren State Hospital, the Danville State Hospital, and the Polk State School.

MISCELLANEOUS PROJECTS

PENNSYLVANIA INSTITUTIONAL FARMS, a monthly news and information medium, was begun in Febuary, 1928.

Institutional Farmers' Week, a program of instruction largely cared for by the School of Agriculture of the Pennsylvania State College, is an important factor in keeping all concerned informed as to best farm practice. Representatives of institutions in the State having farms, State owned, State aided, and county or district, are invited to this program.

Institutional Farm Tour is a tour planned to supplement the above project in establishing common interest and goals.

Poultry is maintained at all of the institutions except two. Flocks vary in number of layers from 163 to 1176. The egg yield per hen for the year ending May 31, 1928, was from 92.4 to 178 eggs. To the institution at Muncy belongs the credit for the latter high yield. Their laying flocks averaged 700 hens for the year.

A special effort has been made during the past six months to make poultry information available. This has been done because of the great contribution which poultry and poultry products make to a number of the institutions and because of the evident lack of uniformity and assurance as to proper methods of management. Such information has centered about the securing and maintenance of disease-free birds.

ACKNOWLEDGMENTS

Sincere acknowledgment is made for the cordial and hearty cooperation of the superintendents, stewards and farmers of the several institutions, those of other Departments of the State Government, and the School of Agriculture of the Pennsylvania State College, who have contributed toward the making and carrying out of this program.